OTA*dvisor*

SUMMER 2002

Check out OTA's PBT Fact Sheets on PAC's, Mercury, and Dioxins - Available for download on our website: www.mass.gov/ota

Dates to Remember:

June 3 - TRI/TURA Lead Workshop for New Filers. Visit www.mass.gov/ota/events.htm for more information.

July 1 - Form S and TURA Plans Due. Download your forms and guidance on DEP's website: www.state.ma.us/dep/bwp/dhm/tura/turapubs.htm

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A message from Secretary Durand...

On behalf of the Massachusetts Office of Technical Assistance (OTA), I am pleased to introduce the first edition of the OTA Advisor. It is my hope that this newsletter will help you stay more informed on the important environmental issues coming your way and will provide a periodic update on some of the office activities. As you know, OTA provides highly skilled technical and non-regulatory compliance assistance to Massachusetts businesses at no cost. And, in the first ten years of our work, we have seen manufacturers make tremendous environmental strides, achieved from the successful adoption of toxics use reduction and pollution prevention practices made on the shop floor.

As we look toward the future, it is clear that environmental considerations will continue to be an important part of your business mission. With that, the next ten years of TUR achievement will be much more difficult to achieve than the first, and that an expanded tool box and an even stronger working relationship between government, academia and industry will be paramount for success.

I hope you find the newsletter informative, useful and insightful, and, as always, if you require additional information, please contact OTA at 617-626-1060.

Very truly yours,

Bob Durand

MASSACHUSETTS OFFICE OF TECHNICAL ASSISTANCE

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helping Massachusetts companies achieve toxics use reduction for over a decade

OTAdvisor

Workshop Follow-Up

Industrial Water Management Workshop

On three separate occasions during October 2001, OTA hosted a workshop on Industrial Water Management that had a regional focus on an area of Massachusetts that has experienced tremendous growth – the Interstate 495 corridor. Many companies in this region are feeling the growing pains associated with water quality, water supplies, and wastewater treatment such as limits on their water consumption or further restrictions on their wastewater discharge. The workshop explored cost-effective opportunities to conserve, recover, and reuse water as part of a strategy to maintain flexible manufacturing operations in the face of limited water resources.

In a follow-up to the workshop, OTA has developed a new web page at www.mass.gov/ota that is dedicated to industrial water conservation. The format offers an expansion on the agenda topics, which covers viable water conservation and management options for process industries, a list of best management practices for industries based on different

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PBTs – The Latest Buzz

Persistent, Bioaccumulative, and Toxic chemicals are known as PBTs, the latest acronym that is a hot topic in the regulatory world of chemical use. PBTs are true to their name; not only are these chemicals toxic, but they are also persistent in the environment and bioaccumulate in the food chain to levels that are harmful to human and ecosystem health. In 1999, the U.S. EPA modified the reporting requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA) for categories of chemicals that were classified as PBTs. These include mercury and mercury compounds, dioxin and dioxin-like compounds, polycyclic aromatic compounds (PACs) and benzo(g,h,i)perylene. These reporting requirements for these chemicals were also adopted into the Massachusetts Toxics Use Reduction Act, M.G.L. c. 211 (TURA). As a result, many facilities in Massachusetts will need to include these compounds in their TURA plans that are due in 2002.

There are many resources available for businesses that must file and plan for PBTs. The EPA has put together guidance documents on the reporting requirements for Form R and can be found on their web site at www.epa.gov/tri/guidance.htm. OTA has also put together fact sheets for those that have to report a Form S and are available on www.mass.gov/ota/advisory.htm.

Special Programs

Partnership for Environmental, Health and Safety in Schools

OTA is seeking businesses to partner with local schools, as a mentor, to address serious chemical management issues and assist in school chemical clean-outs. From this partnership, businesses can build strong community ties by using their expertise to improve the health and safety of local schools.

Serious chemical management issues have been identified in a majority of schools in Massachusetts, including: large chemical stockpiles; highly unsafe chemical storage practices; the presence of aged, unstable (i.e., shock-sensitive), and extremely hazardous materials (i.e., hydrofluoric acid and mercuric chloride). School personnel are at risk from chemical exposure due to a lack of knowledge on the proper use, storage, and disposal of hazardous wastes.

OTA sought business support to set up a school pilot program and received enthusiastic support from the Associated Industries of Massachusetts (AIM) and the Massachusetts Chemical Technology Alliance (MCTA). These groups will help the state to start the development of a chemical management program in schools. With the Department of Environmental Protection's involvement, additional opportunities to lower costs and expand capacity of school chemical clean-outs are also a focus of the study. The pilot will also include developing opportunities to incorporate "Green Chemistry" science programs as well as an OTA-led educational effort focused on chemical distributors that supply to schools. For more information, contact Matt McCook of OTA at 617-626-1292

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Technology Circle

Closed-Loop Degreasing Equipment

OTA is proud to announce the publication of the "Inner-Tite Corporation Toxics Use Reduction Case Study." This publication is the latest in a series of case studies that exemplify toxics use reduction achievements by Massachusetts companies. The focus of this case study is on the Inner-Tite Corporation's discovery of new closed-circuit degreasing equipment, manufactured by Forenta, which enables them to reduce air emissions by 97%, toxics use by 90%, and improve working conditions, with an annual savings of $12,000 of chemical costs. These highly automated units ensure minimal employee exposure to, and efficient recycling, of solvent. The Inner-Tite Corporation also co-sponsored and hosted a New Technology In Process seminar with OTA on February 21, 2002, to show other industries this innovative technology. This case study, along with others in the series, are posted and available for download on the OTA web site at: www.mass.gov/ota

Green Chemistry R&D Update

Green Chemistry is a science-based approach to pollution prevention. It involves a set of established principles for reducing or eliminating the use or generation of hazardous substances in the design, manufacture, or application of chemical products. Green Chemistry focuses on the earliest stages of materials and process design, so that conventional industrial-based pollution liabilities can be avoided. OTA has been involved in a number of green chemistry research efforts to develop new technologies that will either reduce or eliminate toxics use. This is the latest update on what is happening with three research areas:

Dioxin Busters

The production of colored textiles and papers involves the application of dyes dissolved in water to the fibers at some stage in the manufacturing process. This results in colored wastewater that can be difficult and costly to clarify. Another issue is the potential formation of dioxins - potent carcinogens and recently designated as PBTs. Dioxins are formed from processes such as the chlorination of wastewater effluent, bleaching of wood pulp, and incineration of plastic products.

Gus Ogunbameru, of OTA, is working with investigators at Carnegie Mellon University to develop an innovative chemistry that will clarify and eliminate dioxin formation from paper and textile mill effluent. This process involves the development of catalysts, called TAML®, for the activation of hydrogen peroxide to accelerate the oxidation of organic compounds.

What does this have to do with dioxin? Essentially, dioxins form when free chlorine comes into contact with partially reacted or "fragmented" organic molecules, such as what would be found in an incinerator, industrial process that uses chlorine, or municipal wastewater effluent. Activated hydrogen peroxide can get the same reaction rates and, at times, the same selectivity as chlorine-based oxidants, plus it does not form dioxins. Also, it is economically comparable to chlorine-based oxidants.

Through Gus's efforts, industry support has been generated for this project. In October, he arranged a meeting that brought Massachusetts paper and textile representatives to the table with the researchers. After reviewing the results to date, the industry reps were very interested in aiding the project and are allowing the researchers to scale up the system from bench top to pilot plant level at their facilities. This will generate data on the economics of using this promising new treatment system. Contact Gus at 617-626-1065 for more information about this project.

Get the Lead Out!

Did you know that products such as plastics and rubber often contain lead compounds? Lead compounds are used widely as colorants or stabilizers during the manufacturing process. Lead has also been designated as a PBT, making it subject to more stringent reporting requirements. There is also a concern that lead is being used in applications that may not necessarily need its stabilizing performance or for applications other than originally intended.

In an effort to help industries reduce or eliminate lead while remaining competitive, OTA is sponsoring research efforts through STEP, at various UMass campuses. In Boston and Lowell, the agency is working with researchers to characterize the affects of lead used in the litharge process for the manufacture of plastic, wire and cable insulation. Once these attributes are known, more environmentally friendly alternatives can be found. At UMass Amherst, a research cluster is being formed at the Center for UMass/ Industry Research in Polymers (CUMIRP), called Lead-Free Polymers, with the goal to develop new polymer systems that will ultimately eliminate lead from plastics and rubber products. Lastly the Toxics Use Reduction Institute and OTA are working with suppliers of plastics and rubber additives to convince industry to switch to commercially available non-lead stabilizers where the properties of lead are not needed. For more information on these projects, contact Ken Soltys at 617-626-1082.

Ideas from Light

The development of an environmental friendly manufacturing method is actively being persued and it all stemmed from a Department of Environmental Protection referral to OTA. Follow up on this referral by Ken Soltys, of OTA, resulted in the formation of a partnership between Churchill Corporation, Cabot Stains, and ESI, to evaluate the use of electron beam activated polymers to pre-coat cedar siding used in the construction industry. If successful, this new technology will reduce costs, consolidate manufacturing operations, and eliminate volatile organic compounds from being emitted into the environment. For more information on this project, contact Susan Leite at 617-626-1070.

Workshop Follow-Up Continued from page 2

sectors, and links to vendors and further information. Though this web page is in its infancy, OTA hopes to continue to expand and update the information and provide tools that industries can use to help conserve water.

Steps to Improve Fuel Efficiency

OTA, DEP, and TURI, all agencies of the TURA program, worked together to develop workshops focused on the various regulatory aspects associated with Polycyclic Aromatic Compounds (PACs) and benzo(g,h,i)perylene - classified as PBTs. The first of these workshops occurred on November 30, 2001, with OTA as the lead agency. Over 100 representatives from various industries and consulting firms attended the *Steps to Improve Fuel Efficiency* workshop. The focus was on the value of looking at fuel efficiency first to reduce the combustion of fossil fuels, the most common use of PACs and benzo(g,h,i)perylene. The burning of about 5000 gal/yr of No. 6 fuel oil is enough to trigger the reporting requirements for PACs and benzo(g,h,i)perylene and their inclusion in a TURA plan. Results from this workshop included a sample list of toxics use reduction options for PACs and benzo(g,h,i)perylene complied by OTA, which covered these topics: input substitution, improved operation and maintenance, and production unit modernization, redesign and modification. Also from this workshop came a number of website information resources.

As follow-up to this workshop, the TURA program with TURI as the lead agency, held a second, more in depth workshop in February held at three seperate locations statewide - Waltham, Springfield, and Auburn. The workshop provided guidance and information on the TURA planning process for PACs and benzo(g,h,i)perylene – including expanded technical discussions on the energy efficiency topics introduced at the November workshop. For more information, contact John Raschko at 617-626-1093

Green Chemistry Symposium

On October 29 and 30, 2001, OTA co-sponsored the second annual Green Chemistry Research Symposium with the University of Massachusetts, convening researchers, students and business representatives to discuss cutting edge efforts in green chemistry. Speakers included representatives from university laboratories, industry, Massachusetts state government, and the White House Office of Science and Technology Policy. One of the results from this symposium was the formation of the New England Green Chemistry Consortium in order to promote greater coordination among researchers, government agencies, and private industry.

Staff Changes

Two of OTA's Staff Retire

Bill Griffin and Joe Paluzzi have recently retired, effective on March 15, 2002. On behalf of OTA and our clients, though we regret to see you leave, we wish both Bill and Joe congratulations and best intentions - thank you for your hard work and dedication to the program.

Special Programs Continued from page 2

Environmental Insurance Incentives for TURA Filers

The Massachusetts Environmental Insurance Incentives Program was created from an agreement between OTA and four leading environmental insurance companies. This voluntary program is aimed at rewarding Massachusetts TURA filers by linking sound environmental performance and management with tangible insurance policy benefits. This program is the first in the nation to pair the risk reduction potential of pollution prevention and comprehensive environmental management practices with real incentives from environmental insurers, such as premium discounts, available only to TURA filers. After four months of training, OTA is ready to kick-off this program soon. Keep a look out for the Incentives fact sheets on the OTA website: www.mass.gov/ota/eiip.htm

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OTAdvisor is a publication of the Massachusetts Office of Technical Assistance for Toxics Use Reduction

This information is available in alternate formats upon request.

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